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MARKETS AND RECIPES FOR FRESH-WATER TURTLES^{1/}

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Markets for fresh-water turtles, in common with those for many other aquatic commodities, follow no well-defined geographical pattern. Through custom or superior facilities, some of our cities have become good markets for certain products. Thus, St. Louis is an excellent market for the Atlantic coast whiting because of the use of this fish in the sandwiches which are popular in that area; Pacific halibut leads in Denver's fresh-fish trade; Pacific sablefish is most important in the fresh-fish trade of Oklahoma City; and the Great Lakes blue pike leads in Buffalo.

Some of our better markets for fresh-water turtles are in the cities of Philadelphia, Chicago, Baltimore, Louisville, Washington, St. Louis, Pittsburgh, Cincinnati, and New Orleans. Cleveland and New York are considered fair markets, while the demand in Kansas City, Omaha, Nashville, and Detroit is very small.

Inquiries made in 1940 among seafood dealers in the cities listed in the preceding paragraph indicate that the demand for fresh-water turtles rarely exceeds the present supply. Louisville was the only city in which the consumption was said to be increasing. Philadelphia and Baltimore have been and are considered among our better turtle markets, but several of the dealers in these cities reported that consumption is declining. These dealers pointed out that in earlier years the use of turtles was associated with the consumption of liquors. Thus, there was a sharp decline in the use of turtles with the advent of prohibition. This market was only partly regained following repeal.

By far, the bulk of the consumption of turtles in cities is through restaurants, hotels, clubs, and similar outlets. Their use to any considerable extent in the home is apparently restricted to the smaller communities near where they are captured, and particularly to the fisherfolk.

THE TURTLES

The common snapping turtle is the one most frequently sold through our city markets. Its habitat is quite general over the eastern half of the United States. The usual size range of specimens found in the markets is from about 4 to 25 pounds, although they have been known to attain weights of 75 pounds or more.

^{1/}Supersedes Memorandum S-32 and Sp. 2004-N, issued by former Bureau of Fisheries.

The smaller specimens are more tender, however, and consequently preferred for food. The yield of meat, including leg bones, from snapping turtles, is said to be about one-half the weight of the live turtle. Wholesale prices for live snapping turtles in cities surveyed range from 6 to 12 cents, and for turtle meat, from 10 to 20 cents.

The alligator snapping turtle, which is said to reach weights of more than 200 pounds, is found in southern areas overlapping the range of the common snapper. It is usually marketed in St. Louis, New Orleans, and elsewhere in the South. Several species of soft-shell turtles are used for food and are generally acclaimed as being delicious. These turtles seldom reach the large city markets but are said to be handled to a moderate extent in the local markets in the areas which they frequent. They are particularly popular as a food among those who capture turtles for sale.

Numerous other species of fresh-water turtles are used as food. Among such species, Pope^{3/} lists the Mississippi and common map turtles, the Pacific pond turtle, the Mobile turtle, the Suwanee turtle, the red-bellied and yellow-bellied turtles, the chicken turtle, and Troost's turtle. Wood turtles and painted turtles also are said to be eaten locally at times. It is reported that the desert tortoise probably has always been eaten by the Indians and by prospectors when other food was not available. The Creek Indians are reported to have eaten and relished gopher tortoise in regions where they are plentiful.

Capture: Probably the bulk of the snappers sold in the markets are captured while they are in hibernation. During the autumn and early winter they collect and mud-up for the winter. Favorite places for hibernation are in old muskrat burrows. The turtle fisherman's equipment consists of an iron rod with a hook at one end and sharpened at the other. The sharp end is prodded into the mud along the banks of streams until the turtle, which feels to the fisherman much like a chunk of wood, is encountered. It is then pulled out with the hook. Turtle fishermen pride themselves on their ability to locate likely spots where turtles may be hibernating. The preference of turtles for muskrat holes as places for hibernation is indicated by one report of the capture of 26 turtles from one burrow, and another of taking 1,420 pounds from a single hole. Snappers also congregate about and under old logs. An instance was reported of a fisherman who obtained 20 turtles weighing from 10 to 20 pounds each under a log in one of the sloughs of the Mississippi River.

Other apparatus used in the capture of snapping turtles include trot lines, haul seines, fyke or hoop nets, and turtle pots or traps. Soft-shell turtles are taken by trot lines, fyke nets, pots, spears, and haul seines. It is reported that fishermen or others in turtle fishing communities frequently maintain pens for storing the live snapping turtles until they can be marketed most advantageously.

Analyses of Markets in Chicago and New York City: Receipts of live fresh-water turtles of all kinds in the Chicago market areas during 1939 aggregated 9,800 pounds, while turtle meat amounted to 1,600 pounds. The States of origin for these shipments were, in order of their importance; Minnesota, Missouri, Iowa, Wisconsin, Louisiana, Michigan, New York, Florida, Maryland, and Mississippi. About two-thirds of the live turtles were received by truck from the nearby States of Minnesota, Missouri, Wisconsin, Iowa, and Michigan. Nearly half of

^{3/} Turtles of the United States and Canada, by Clifford H. Pope. Published by Alfred A. Knopf, Inc. New York City. 1939.

the turtle meat came from Louisiana, with smaller quantities from Wisconsin and Florida. The monthly receipts of turtle products in Chicago during 1939, in terms of percentages of the total for the year, were as follows; February, 22; April and December, each 19; July, 14; October, 8; August, 7; June, 6; September, 3; May, 1; and November, less than one-half of 1. There were no receipts in January or March. It is the opinion of market men in Chicago that aside from the seasonal fluctuation the demand for fresh-water turtles has varied but little in the past 10 years. Here, as in most other cities, the principal medium for the consumption of turtles is through restaurants, clubs, taverns, and hotels, with some demand from southern-born whites who have come from sections of the South where turtles have long been esteemed, and to a lesser degree from Chinese and Negroes.

Live snapping turtles arriving in the Chicago markets during the spring or summer are usually butchered and the meat frozen for the more active fall and winter trade. Boxes and barrels used for the shipment of turtles have numerous holes bored through the sides to admit fresh air and prevent suffocation of the turtles during shipment. Such a precautionary measure is necessary since turtles must be alive to be marketable. Where shipments are reasonably small and sale will remove the turtles within a few days, they are usually left in the shipping containers until marketed; however, concerns handling turtles in large quantities usually transfer them to dark, damp pits or large wooden bins having from 6 to 8 inches of water at one end and clean sand above the water level at the other. In such storage the turtles are fed and may be kept alive and healthy for many months.

The Chicago fresh-water turtle market is based almost entirely on snapping turtles; other kinds of hard-shell turtles and soft-shell turtles amount to less than 2 percent of the annual market transactions. Snapping turtles received in Chicago usually range in size from a minimum of 5 pounds to a maximum of 40 pounds each, with specimens weighing from 5 to 15 pounds most desired. Soft-shell turtles vary from 3 to 8 pounds in weight, with 3 to 5 pounds as the preferred sizes. Other hard-shell turtles frequently called terrapin, land terrapin, or mud terrapin, vary from about 6 to 10 inches in width of shell or carapace.

New York's market receipts of live fresh-water turtles during the last 10 months of 1938 totaled 7,700 pounds, two-thirds of which arrived by motor truck and nearly six-tenths of which were received in April. Receipts of turtle meat were negligible. States of origin of shipments of fresh-water turtles to New York during the 10-month period, in order of their importance, were: New York, Delaware, Virginia, New Jersey, Maryland, and Florida. Dealers in New York distinguish among snapping turtles, soft-shell turtles, and sliders. The latter term applies to the several species of hard-shell turtles other than snappers. It is said that the principal market for snapping turtles is among the Chinese. Soft-shell turtles are seldom sold in New York and are received mainly on order by people of southern birth for special occasions. Sliders are sold principally to scientific or biological supply houses, with a few going to the Chinese trade for food.

PREPARATION AND RECIPES FOR COOKING

In dressing the turtle, the first step is the removal of the head. This can be rather easily accomplished in the case of the snapper by causing it to snap at a stick. It grasps the stick with a tenacious hold and the head can be readily pulled forward. The heads of other species may be made to protrude by applying pressure, as with the foot, to the back or upper part of the shell. After the neck is well stretched out, the head can be readily cut off. Dressing the turtle

is described by Clark and Southall ^{4/} as follows: ". . . a sharp knife is run around the edges of the skin where it joins the shell and the skin pulled back over the legs to the feet, which are then disjointed. The lower part of the shell or plastron is then removed by cutting through the bridges which join the upper and lower shells, cutting close to the lower part of the shell. With snappers and soft-shells, in which the bridges are rather soft and cartilaginous, this can be done with a sharp knife. With the terrapin the bridge may be cut with a hatchet or saw. Having cut the bridges, the plastron or under shell may be readily removed by inserting a sharp knife just under it and lifting it off. This done, the entrails may be extracted with very little trouble, and the four quarters easily taken out from the carapace or upper shell. If one wishes to save the tenderloin in the upper part or 'ceiling' of the carapace, the ribs may be cut with a hatchet. To the reader this may appear to be a lengthy and complicated process; but, . . . it is a simpler process than killing, plucking, and dressing a chicken."

Those familiar with the use of turtle for edible purposes say that the snapper contains several kinds of meat. One man reported 6 or 7 kinds; another, 7 to 9 kinds; and still another, 14 kinds. Many city dwellers are not familiar with the use of turtle meat in any other way than in soups. No doubt, the demand for fresh-water turtles would be appreciably increased if there were a more general familiarity with the methods for the preparation of turtles for the table. Some recipes follow:

SNAPPER STEW

4 lbs. snapper meat	1½ pints water
1/3 lb. minced onion	Wine glass of Madeira wine
2 tbsp. flour	1 small clove of minced garlic
1/4 cup lard or olive oil	Bay leaf, thyme, and salt to taste

Brown the onion and garlic lightly in the lard or oil. Cut the meat into cubes about 1-inch square, sprinkle with flour, and braise lightly in the hot fat. Add the water slowly and when near the boiling point, put in the Madeira wine and other seasonings. Simmer one hour.

Fried Snapper: Put the turtle meat into salt water overnight. Wipe dry, sprinkle with flour, and fry slowly in plenty of fat until brown. Fried snapper is said to be better than fried chicken and old turtles as good as young for cooking in this manner.

Turtle Cutlet: Take lean turtle meat, pound until like cubed steak, dip in egg, roll in meal, and fry in hot fat.

Other recipes which are available upon request include those for turtle soup, turtle chowder, steamed turtle, simmered turtle, curry of turtle, turtle ravioli, turtle sausage, stewed terrapin with cream, and additional recipes for fried turtle.^{5/}

^{4/}Fresh-water turtles: a source of meat supply, by H. Walton Clark, and John B. Southall. Published as appendix 7 to the Report of the Commissioner of Fisheries, 1919. (This publication is out of print but is available for reference in many university and public libraries, especially those which are Government Depositories.)

^{5/}Turtle recipes. Sp. 2004-K. (Obtainable from the Fish and Wildlife Service, United States Department of the Interior, Chicago 54, Ill.)